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PATENT SPECIFICATION

Application Date: Oct. 31, 1932. No. 30,606/32.

Complete Accepted: July 13, 1933.

COMPLETE SPECIFICATION.

Improvements in or relating to Ventilated Insoles for Boots and Shoes.

I, OTTO MÜLLER, of No. 52, Bethmannstrasse, Frankfurt on the Main, Germany, of German Nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a ventilated insole which is arranged between the outer sole and the inner sole of the shoe and is intended firstly to impart a good supporting surface adapted to conform to the shape and unevennesses of the foot and secondly to allow a perfect accommodation of the perspiration of the foot.

The ventilated insole according to the invention consists of a grid-shaped framework composed of narrow bars arranged on the edge to form a supporting surface without raised portion, which bars only occupy a small percentage of the total surface area as compared with the spaces within the bars, the ventilated insole being fitted between the remaining parts of the shoe so that air-filled spaces and the bars are directly in contact with the inner sole of the shoe, whereas on the side directed towards the outer sole the spaces are preferably provided with a thin covering.

By this construction the frame work can easily yield laterally and in itself under the pressure of the foot resting thereon, so that it adapts itself to all unevennesses of the foot. Moreover the perspiration of the foot can pass through perforations in the insole, into the spaces of the framework, the continuous alternating compression and expansion of the framework during walking exerting a favourable suction effect.

The framework may be produced with the aid of relatively thick textile threads which are woven or plaited to form the grid and thus form the supporting surface, or a flat solid material of the necessary thickness can be pressed or stamped so that the ribs or bars of the necessary thickness are formed at suitable distances apart. Rubber is most suited for making the ventilated insole according to the latter procedure.

[Price 1/-]

Insoles of different kinds are known in which a grid-shaped layer of rubber or the like is employed, these insoles being covered towards the ordinary inner and open towards the outer sole of the shoe so that they are not capable of accommodating the moisture entering from the insole. The known insoles are likewise mostly provided with raised portions or projections on one or both sides, within which the air circulates, whereas according to the invention both the upper and lower sides of the framework form a uniformly high and therefore level surface on both sides.

An embodiment of the invention is illustrated in the accompanying drawing in which:—

Fig. 1 shows in perspective view the arrangement of the ventilated insole between the ordinary outer and inner sole of the shoe.

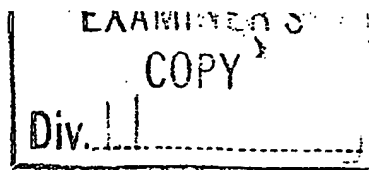
Fig. 2 is a cross section showing the ventilated insole in a shoe.

Fig. 3 shows in perspective view a ventilated insole made of pressed solid material.

In the drawing *b* designates the ventilated insole which according to the construction illustrated in Fig. 1 is composed of plaited textile threads, whereas in Figs. 2 and 3 it is stamped from solid rubber material. This insole *b* is formed by bars of maximum height of a few millimetres, and arranged so that they only occupy a small percentage of the total surface area as compared with the spaces within the bars.

The framework of this insole is so firm that it is sufficiently resistant to serve as supporting surface even under full load.

An ordinary shoe inner sole *a* provided with perforations is arranged over the ventilated insole *b*. Consequently the perspiration from the foot can pass through the shoe inner sole *a* into the spaces in the ventilated insole *b*. The spaces of the insole *b* are provided on their lower side with a covering *c* which is so constructed that no moisture can penetrate into the interior of the shoe and consequently the shoe inner sole *a*



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and the foot remain dry. The water-proof layer *c* consists preferably of a fabric which is provided for example in known manner with an adhesive substance by means of which it adheres to the framework forming the ventilated insole *b*. The under side of the framework directed towards the outer sole of the shoe has a coating of waterproof tightly adhering elastic material such as celluloid varnish, copal varnish, rubber or a similar substance. The water proof layer is coated in a similar manner if the ventilated insole is pressed or stamped from solid material as illustrated in Figs. 2 and 3.

The ventilated insole *b* is arranged between the shoe inner sole *a* and the filling composition *d* or, if this is omitted, between the shoe inner sole *a* and the outer sole *e*, so that the open spaces of the ventilated insole *b* are directly below the perforated shoe inner sole *a* and it rests with its waterproof layer *c* on the composition *d* or directly on the outer sole *e*.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1.—A boot or shoe, characterized in that a ventilated insole consisting of a grid-shaped framework formed of narrow bars standing on edge and forming a supporting surface without projecting raised portions, which bars occupy only a small portion of the total surface area as compared with the spaces within the bars, is arranged between the outer and perforated inner soles of the shoe so that the spaces are directly against the shoe inner sole without any covering or intermediate layers.

2.—A boot or shoe as claimed in claim 1, characterized in that the framework of the ventilated insole is formed from solid material by stamping or pressing apertures therein.

3.—A boot or shoe as claimed in claim 1, characterized in that the framework of the ventilated insole is provided with a water-proof closing layer toward the outer sole of the shoe.

Dated this 31st day of October, 1932.

FRANCIS HERON ROGERS,

Agent for Applicant.

Bridge House,

181, Queen Victoria Street, London,

E.C. 4.

Miller

[This Drawing is a reproduction of the Original on a reduced scale.]

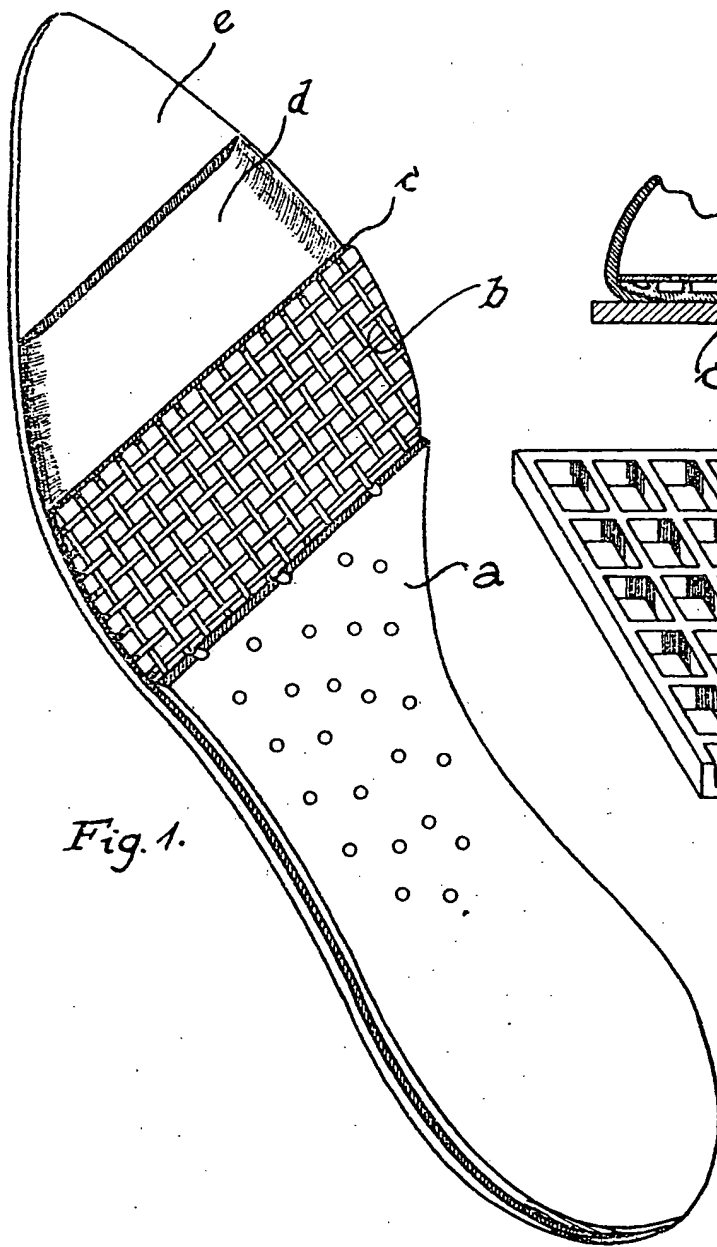


Fig. 1.

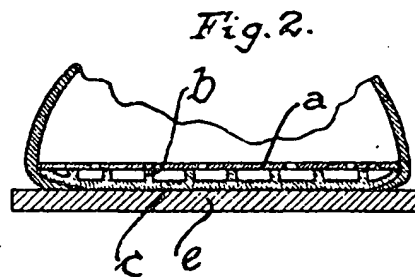


Fig. 2.

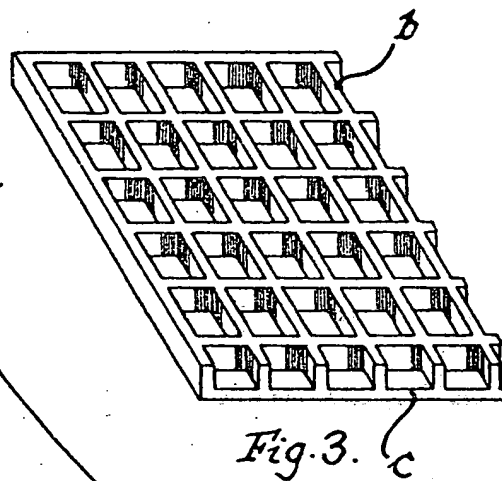


Fig. 3.

Pat. 735,094
August 14, 1904